THE VETERINARY RECORD

A Weekly Journal for the Profession.

No. 650. DECEMBER 22, 1900. VOL. XIII.

FOOT-AND-MOUTH AGAIN.

A further outbreak has occurred in Herts, and judging from the meagre information to hand it has the appearance of a dangerous one—as to risk of extension that is.

Up to the present the V.S. has held the breach manfully, and all the recent outbreaks have been surrounded and extinguished, but in no case has the mode of infection been traced, and in that respect we are as far from safety as we were nine months ago.

REPORTS OF CASES.

Our remarks on this head last week have brought many pleasant letters—from old friends and new ones—and a sprinkling of cases. We hope the supply will be kept up. If only *one in nine* of our subscribers would send us *one clinical note in a year* we should have enough to offer our readers an average of *three each week* of the year and some to spare.

One subscriber points out that many men cannot report a case—to their own satisfaction, that is. As a matter of fact, the man who is in practice with the pen, like the man who is in practice with the scalpel, can make a far better show than one who is not, but we shall find fault with nothing that is sent us if only it contains the essential facts clearly stated and is not too badly written. As Prof. Dewar said at Darlington the other day, such notes may be brief. "The plain bare facts, the obvious or apparent cause, the symptoms or various phenomena as they arise, the course and duration, and the results are of more value than a long disquisition with various hypotheses and probable deductions, neither of which may be within sight of the truth." He also pointed out that the publishing of these cases is a benefit to the profession, and through them to the public; and that it would be to the practitioner's own advantage to record them for subsequent perusal and study, but we fear that this last is not likely to prove a more effectual argument here than one of our correspondents considers it in reference to the National Defence Society. Illegible writing is a nuisance all round, and there is no excuse. It is sheer carelessness, for the older men with less elaborate schooling almost all write legibly. Spelling is of little consequence unless it may lead to the confusion of two similar terms (*e.g.* ileum, ilium) and one of our best contributors sends us some "howlers" in the way of spelling sometimes.

FRACTURE OF THE PATELLA WITH OPEN FEMORAL JOINT.

Subject.—Very game, fast, aged, bay pony, about 13·2 hands.

Circumstances.—Collided with cart when in harness and was upset. Bolted, on rising, homewards, with offside shaft and harness only attached.

Place of Accident.—In town, at foot of hill, on a right angled corner of narrow streets about 60 yards from stable.

Nature of wound.—A clean puncture about 1½in. in size and practically circular, situated on face of right patella when limb is at rest and extending into the femoral joint through the patella, which was broken in two pieces of 2-5th and 3-5th size. The bone was cleanly split in two just as if sawn by fine saw. No bruising of surrounding tissue; no laceration.

Information received.—In trying to take this particular corner the pony had to avoid a farmer's cart, and this with the narrow streets sent it into the houses. It is supposed that the point of the shaft struck the buildings and the broken end punctured the joint, splitting the patella in so doing. A rather unique case.

J. CAMPBELL HILL, M.R.C.V.S.

OPERATING STOCKS.

We are a fraternal profession and always glad to help each other. So many of our clients now-a-days are objecting to having their animals thrown for purposes of operation: firing, dentistry, castration, and neurotomy that the use of stocks which had become more or less obsolete must again be had recourse to. Mr. Dollar's operating table, although it may do, is very expensive, somewhat complicated, and possibly perhaps not every horse can be got easily into it. What we want now is the most practical form of stocks that can be erected reasonably cheap, thoroughly stout and strong, in which a horse can neither rear up nor get down, readily secured and released, and easily put into. Such an arrangement as the practitioners can go all round his limbs, or pretty nearly any part of the body and perform nine out of ten of the operations that occur in every day practice. In a town business such a thing would be an immense boon, and for country simply invaluable.

We understand stocks are in general use on the Continent as well as various forms of operating tables, and in the United States they are very com-

mon, even in the shoeing forges for unruly animals. It is believed there are several in England though we don't know where to find them. It would be of much advantage to all young practitioners and many of the older ones if we could get sketches or descriptions in *The Veterinary Record* so as to help us to that form which is really the most practical and best at a reasonable price.

Mr. Dollar says casting an animal gives it a nervous shock. Undoubtedly he is right, and a practical man finds that the clot is frequently forced out and bleeding commences as the colt arises from being thrown for castration, occasionally backs are broken and other injuries inflicted when casting. Some of our clients are getting to know all this. Let us go thoroughly into the matter of operating stocks.

S. V. D.

SEPTIC METRITIS.

Subject.—A Scotch terrier bitch, three years old.

Clinical History.—The animal showed symptoms of abdominal pain for two days, with loss of appetite, occasional vomiting and no action of the bowels.

On being brought to the Infirmary the abdomen was found very much distended and painful to the touch, the animal appeared in dull pain, the pulse was weak and thready, a purulent offensive discharge issued from the vagina, but there was no straining.

There was no history of pregnancy. The patient sank rapidly and died the same evening.

Post-mortem.—Acute inflammation of the uterus of a septic character, there were slight traces of inflammation in the peritoneum.

Remarks.—We are at a loss to know the cause of the metritis. In the absence of the vaginal discharge we would have diagnosed the case as one of acute peritonitis.

LARGE FIBROUS TUMOUR IN THE REGION OF THE LEVATOR HUMERI.

I report the following case not because such tumours are rare, but in consequence of its large size and dangerous situation.

The subject was a small sized harness mare, aged; the tumour was hard and extended into the jugular furrow, and was firmly adherent to the surrounding structures.

It was apparent that treatment had been tried previously, such as incision, blisters etc.

The risks were placed before the owner, who consented to have the growth removed.

It was the largest fibroma I had ever removed and contained the usual small pus cavity in its interior. It extended a very considerable depth, and was almost in apposition to the carotid artery. There was considerable hæmorrhage and one very large vessel was severed, this was ligatured after some difficulty by means of the largest size Greig-Smith artery forceps. The animal made a good recovery, and there was no re-appearance of the growth.

No one can deny the difficulties in restraining hæmorrhage in these operations, as the vessels are deep-seated and very hard to get at. It is necessary to proceed with caution in deep situations, and it is a safe plan to employ a forcep with extra long jaws to lay hold of deep-seated tissues before cutting them through.

In some instances we have had to leave the forceps remain on the vessel for 24 hours, as it was impossible to apply the ligature with safety.

We find the use of dissectors very valuable in getting round these growths, while the fingers, properly employed, are both safe and serviceable in enucleating deep seated portions.

E. Wallis Hoare, F.R.C.V.S., Cork.

GUNSHOT INJURY.

The following case, which appears to be a little out of the common, was related to me by the owner in the hunting field. The patient, a thorough-bred brood mare in foal, was turned out to grass with some others. She was observed to be going slightly lame, but as she was difficult to catch and handle no further notice was taken for some time until she got worse. She was then examined, and, as the owner described, a number of small lumps were felt on the outside of the off pastern joint. The hair was clipped, the mud washed off, and it was found that the "lumps" were hard and movable, just under the skin. One was opened with a sharp penknife and a No. 5 chilled shot extracted. Eight or ten more were removed, and in two or three days the mare was perfectly sound without any further treatment, and still remains so. The remarkable point in the case is that it must have been at least a month from the time the injury was inflicted to when the first symptoms of lameness were noticed, and the rapidity with which the mare became sound after the offending bullets were removed.

Joshua A. Nunn, Vet.-Lt.-Col., A.V.D.

ABSTRACTS FROM FOREIGN JOURNALS.

Neurotomy in Surgical Therapeutics. — By M. Jacoulet, Professor Cavalry School, Saumur, France. (Paper read before Central Veterinary Medical Society, Paris, Nov. 8th, 1900.)

In the discussion on my paper on this subject read before the Central Veterinary Medical Society on 14th and 18th June, 1900, I gave the results of my experience from a surgical and pathological point of view.

I. For a long time past I have recognised that low neurotomy, even double, is useless in many of the cases of lameness for which it has been recommended, the reason being that in such cases the cause of the lameness is multiple, and is not invariably situated below the point at which the posterior branch of the plantar nerve is given off. Very many of the cases classified as navicular disease are not simply the recognised lesion of that joint but are complicated by astro-arthritis more or less pronounced

of the coronet, and even other complications, both ossific and synovial, situated higher up. Low neurotomy furthermore is often complicated by neuroma as a sequel. It leaves an unsightly cicatrix, and almost invariably two operations are required on the one limb.

II. High neurotomy above the fetlock also has the two last named disadvantages. If the double operation is performed it is no doubt effective if the seat of the lameness is situated below the fetlock, but in the many cases that are complicated with lesions above it is useless, it is often followed even after the lapse of a considerable time, by sphacelus of the foot. Before the introduction of neuro-neurectomy this fact led me to perform high neurotomy on the side of the limb that the lesion was most extensive on, and the low operation on the other.

Since 1893 I have practised medium and sciatic neurotomy to the exclusion of both others, and with the first up to date I have been satisfied, not having had a single case of sphacelus or degeneration of the structures of the foot.

The results of high and low neurotomy, both single and double, are not durable, lasting from 18 months to two years. In the Cavalry School at Samur we have had horses working for four years after the medium operation and improving in their paces.

III. The ossific and astro-arthritic lesions which cause the great majority of cases of foot lameness, with deformities of the feet and alteration of the true position of the limb, are generally situated on more than one articulation between the foot and the knee or hock, and they are usually accompanied by, and more or less associated with, lesions of the tendons and ligaments etc. These lesions are usually termed sprains, but the classification is a loose one as they are due to a variety of causes. Besides the ordinary antiseptic precautions to be taken in the operation, it is important not to work the animal too soon afterwards, and I condemn the practice of at once turning him out to grass. I think he should be kept up and gradually brought into work. He should be rested for at least forty days after the operation, and longer if necessary, until all signs of lameness, heat in the foot, and traces of inflammation in the seat of operation have disappeared.

Since 1894 we have performed 52 medium and three sciatic neurotomies at Samur on patients between five and eleven years of age, the majority being between five and six. Of the three cases of sciatic neurotomy one was for spavin and a failure, the other two for low ringbone of recent origin. Both cases were considered hopeless, but the results were excellent, especially in one, a six-year-old mare that had been bought at a large figure.

I have noticed in a certain number of cases patches of eczema on the back of the fetlock and round the coronet supervene after the operation. They are sometimes very obstinate, but I have found that they yield to siccative treatment, especially tincture of iodine and solution of sulphate of copper 3 per cent. with proper bandaging. In the same period, viz., from 1894 to 1900, out of nine high double neurotomies one was followed by sphacelus. It was an officer's charger that had been turned out to grass a month after the operation.

In young horses in which the lesion has not long developed, medium neurotomy has an inhibitory action and in my hands has given good results.

To recapitulate, from the results of our clinic at Samur I have come to the conclusion that medium neurotomy is infinitely superior to either the high or low operation. It embraces a much wider region, preserves security in the paces, and is free from the disastrous sequel of sphacelus or degeneration of the foot, and when had recourse to sufficiently early arrests the development of bony lesions that would otherwise grow to great size.

The results are permanent and the scar left is insignificant, only one operation is required on the limb, and the danger of a neuroma developing is small, at least I have never seen one in any of my cases.—From *Recueil de Médecine Vétérinaire*, Nov. 30, 1900.

JOSHUA A. NUNN, Vet.-Lt.-Col.

(Continued from p. 316).

CASTRATION OF CATTLE.

III. Contribution by Veterinary Surgeon SICKERTS.

Five castrated cattle were compared by milk measurings and body weighings with five non-castrated cattle. Each batch of cows was treated and fed similarly. The measurings and weighings do not tend to the favouring of castration.

From the beginning to the end of the measurings which extended over nine months the castrated cows lost a total of 25 litres (5·05 litres per head, about 178 fluid ounces).

The cattle not castrated only lost 19·8 litres (3·96 litres per head, about 131 fluid ounces.) In weight the castrated cattle put on 170 pounds in weight (34 lbs. per head) the non-castrated put on 560 pounds (112 lbs. per head.)

G. M.

INOCULATION AGAINST RINDERPEST IN INDIA.

From the Report of Dr. LEONARD ROGERS.

(Continued from p. 321.)

KOCH'S BILE METHOD.

(1) Bile (Koch's) in Plains Cattle.

A series of eight plain animals were inoculated with 10 c.c. doses of sweet green biles obtained from the fifth to the seventh days, and their immunity was subsequently tested after varying intervals of time, either by inoculation or by exposing them to natural infection in a shed which contained cases of rinderpest.

Summary.

It appears from the above experiments that the two animals which were tested at periods of 5 and 5½ months respectively after the injection of sweet green biles, both contracted ordinary attacks of the disease, one of them after inoculation with virulent blood, and the other on exposure to infection with diseased animals. Of two more which were injected with a small dose of virulent blood three and a half months after the bile, one devel-

oped a slight attack of rinderpest and the other was only partially immune as shown by his getting a well marked rise of temperature without other symptoms ; of three others tested at about three months, two had temperature reactions, showing only partial immunity, and the other one a doubtful one, so that although immune at a little under three months, it is probable that the protection would not have lasted much longer.

It may therefore be concluded that the immunity afforded in Indian plains cattle (and those tested comprised animals from both the North-West Provinces and the Punjab) varies between three and a half and five months, and probably averages about four months. Although the number of animals tested is small, the results agree so closely with those obtained in so many thousands of animals in South Africa, as well as in Russia and Turkey, that they may be regarded as being probably correct.

It should however be mentioned that Veterinary Major Raymond of Bengal claims to have obtained immunity of a year's duration by the use of bile taken from buffalo calves which had been inoculated with rinderpest, but unfortunately his experiments cannot be considered conclusive, as those animals, which had not received injections of virulent blood at earlier dates, were only tested with 1 c.c. doses of rinderpest blood ; yet out of 18 animals which were tested by him with doses of from 40 to 80 c.c. (the great majority of which were injected with the larger dose mentioned) after having previously been injected or drenched with emulsions of dried rinderpest hides or made to feed out of such skins, only one developed severe rinderpest, and three more a very mild form of the disease, although, as the experiments were held to have proved that the skins used no longer contained the virus of the disease, it is difficult to see how these animals could have obtained immunity from them as the author suggests, but they appear rather to show that the great majority of the animals he used for his experiments were naturally immune.

(2) *Bile (Koch's) in Hill Cattle.*

Fifteen hill animals have been inoculated with sweet green biles obtained on dates of the disease which varied between the third and the eighth, and they were tested after different periods of time. The results are very different from those obtained both in South Africa and in the case of the plains animals tested here, the duration of the immunity being much less, and in this respect it confirms the extreme susceptibility of this breed of animals to the disease, and the difficulty of protecting them.

Summary.

An analysis of the above series of experiments shows that of five animals, which were tested at about four months after the injection of the bile, one only was immune, and that one had lost its protection four and a half months later ; one which was inoculated after three and a half months, and three more at a little under three months, had all lost their immunity at the end of those periods, although one of the latter suffered from a somewhat mild attack of the disease ; one tested after a little less than two months, and one at just one month, after the immunity is said to be complete, namely, on the tenth day, both showed no immunity ; while of two which were inoculated on the tenth day after the bile, one took the disease in a virulent form, and the other had a slight attack as shown by the lesions found *post-mortem* on his dying of inter-current disease twenty-four days later, although he showed neither definite temperature reaction or symptoms after the blood injection. In all these cases except the last mentioned the bile was a sweet smelling green one of from the sixth to the eighth day, and in the latter it was of the fifth day. If we examine the series with regard to the exact date of the disease on which the bile was obtained we find that in the one animal, which was immune nearly four months after the injection, a bile of the eighth day was used, but on the other hand two other animals, which were injected with the same bile, and tested at periods of less than four and less than three months respectively, both died, showing no immunity, so that the former case seems to have been altogether an exceptional one. The two animals which showed no immunity on the 54th and 41st days were both done with a seven-day bile, while in others a six-day bile was used ; so no marked difference from this point of view between biles of different days can be detected. In six of the experiments the bile was used on the same day as it was obtained, in two it had been kept three days and in two for five days in the cold room, but again no difference was observed in the results obtained from the different biles, although the very rapid loss of immunity in the Nos. IX and X might possibly have been attributed to the biles used having been kept for five days had not other biles, which had been kept only for three days (a period which some South African authorities advise that it should be kept in order to lessen the chances of it causing the disease) failed even to afford immunity on the tenth day after its use. The failure of the biles of the third and fourth days of the disease to afford any immunity is only in accordance with South African experience.

Whatever way, then, this series of experiments is examined, it is impossible to come to any other conclusion than that the bile method affords little or no immunity of practical value in these very susceptible Kumaon Hill breed of cattle, while even if immunity of two or three months duration could be obtained in them, it must be admitted that the loss of ten days, even after the bile has been been obtained, before immunity results is a serious disadvantage on account of the extreme rapidity of the spread of the disease in hill outbreaks.

(3) *Experiments with Rinderpest Bile and Blood Mixed.*

As rinderpest bile was found to give so little immunity in hill cattle, a mixture of it with virulent blood was tried to see if would afford longer protection against the disease. As, moreover, it had been found that considerable quantities of rinderpest blood could be safely injected if mixed with a small quantity of a solution of the purified ox gall of the British pharmacopœia, it seemed to be likely that equally large quantities of virulent blood might be added to rinderpest bile without setting up the disease, and with possibly greater resulting immunity than the bile alone gives.

Remarks.

It appears from these three experiments that rinderpest bile cannot be safely mixed with an equal quantity of rinderpest blood and injected subcutaneously, and that in one case in which this was done, without the disease being set up, only a partial immunity was found to be remaining a little over one month after the original injection, so that the method does not present any advantages over the simple bile inoculation even when it is successful.

It is also worthy of notice that 10 c,c. of the 10 days old bile appeared to have less effect in neutralising rinderpest blood than did 1 c.c of a solution of the pharmacopœal bile made in water with a specific gravity of about that of ordinary bile, as shown in the experiments in Section V. On the other hand, the inoculation of equal parts of rinderpest bile and blood in the first experiment without any disease being set up, although the reaction of the animal a month later showed that he was not entirely insusceptible to the disease, taken with the experiments in Section V, and the fact that no animal which was inoculated with rinderpest bile after Koch's method in a healthy shed ever developed the

disease as a consequence, go a long way towards proving that at any rate a bile of from the sixth to the eighth day of the disease will very rarely, if ever, give rise to rinderpest in cattle.

Glycerine Bile Method of Edington.

The glycerine bile method of Dr. Edington consists of a first injection of 15 c.c. of a mixture of two parts of bile and one of glycerine which has been kept for eight days, but which, it is claimed, is equally efficient after a year has elapsed. This is followed after ten days by an injection of 0·2 c.c. of rinderpest blood, and as a result a mild attack of the disease is induced which affords an active, and hence lengthy, immunity. During the ten days after the bile injection and for two or three days after the injection of blood the animal must be protected against natural infection or a fatal attack of the disease may result. Nearly 400,000 animals have been inoculated by this method in South Africa with a loss of 8 per cent., which presumably includes losses in infected herds during the time which elapses between the first injection and the obtaining of immunity. Any bile which is not of a pale brown or yellowish colour or red with blood may be used.

(1) *Glycerine Bile in Plains Cattle.*

A series of eight plains animals were inoculated with 15 c.c. doses of glycerine bile, containing two parts of bile and one of glycerine, and followed after ten days with 0·2 c.c. of rinderpest blood, in accordance with the method of Dr. Edington of Cape Colony. By this means a mild attack of the disease is said to be caused with a resulting lengthy immunity. Subsequently another series of four cases were inoculated by the same method with a mixture of glycerinated biles, as advised by the same authority.

Summary.

Taking the whole of the twelve cases in which this method has been carried out in plains cattle, we find that in only four of them did any signs of disease follow the small dose of blood ten days after the injection of the glycerinated bile, while two of these showed only a rise of temperature for one and three days respectively without any symptoms whatever of rinderpest. The other two showed, in addition to well marked fever lasting for 5 and 7 days, respectively, decided symptoms of rinderpest, which was, however, of a mild type in No. IX, but somewhat severe in No. III, more so in fact than would be agreeable to Indian villagers. The reactions, then, when they do occur, are very variable in their intensity, and are not under accurate control. It is possible that by the use of a larger dose of blood at the second inoculation a larger proportion of reactions could be obtained, but judging by the severe reaction which followed a dose of 0·2 c.c. in No. III, it is probable that it would be at the expense of losing some of the animals, so that it would not be advisable in this country. The small number of animals which reacted is no doubt in part due to the susceptibility of Indian cattle being much more variable than it was in South African herds, but even in that country a very considerable proportion of the cattle failed to get any disease after the blood injection, the exact number not being given in any of the literature at hand. The results obtained here, then, agree very closely with those of Cape Colony, so that although the exact duration of the immunity in those animals which did not react has not yet been adequately tested, owing to the necessary time not having elapsed, yet it may probably be pretty safely estimated at from two to four months as in South Africa. Experiment No. II is of special interest as the animal had been born and bred on the Government Farm at Hissar and was therefore known with certainty never to have suffered from rinderpest, yet he failed to react, although a second dose of 10 c.c. of rinderpest blood was injected 13 days after the first one of 0·2 c.c. However, when he was again injected with 10 c.c. of virulent blood three months after the original inoculation with glycerine bile, he was still immune, which seems to support Edington's statement that by repeated injections of increasing doses of virulent blood at intervals of about ten days after the glycerine bile, a considerable degree of immunity can be gradually built up, but such a method is far too lengthy and cumbrous a process to be practical in Indian villages.

On the other hand, No. III, which had such a severe reaction, was also a Hissar animal, which only emphasises the great variability in the reactions obtained in similar animals by this method.

To sum up, it appears that the glycerine bile method can be safely used in Indian Plains cattle, but that about two-thirds of the animals fail to get any reaction after the blood injection, and so only gain immunity for 3 or 4 months, while of the remaining third a few will get a somewhat severe attack of rinderpest, but they will obtain much longer protection. It must also be borne in mind that the immunity is not developsd until ten days after the injection of bile, which has to be obtained from a rinderpest animal and kept for 8 days after being glycerinated, nearly three weeks valuable time being thus lost by this method.

(2) *Glycerine Bile in Hill Cattle.*

The following experiments were carried out by this method in hill animals. In Nos. III to VIII of these only 5 5 c.c. of the mixture was used as the animals only weighed 200 lbs. on the average, as compared with anything up to 1,200 lbs. in the case of the South African cattle, while the amount of bile furnished by these animals averages only 170 c.c., so it was hoped that the smaller dose used might be sufficient and allow of a fair number of cattle being inoculated from the bile got from one animal, so as to make it a practical method for these animals. In this expectation we were disappointed, as even 25 c.c. failed to give the necessary protection to render the inoculation of blood safe, as will be seen from experiment XII.

Summary.

In only one of the 12 experiments recorded above was a satisfactory result obtained, namely, in No. XI, in which a mild attack of rinderpest, with no doubt lengthy immunity, followed the injection of the virulent blood on the tenth day after the glycerinated bile. In all the other eleven a very severe attack of the disease occurred, which proved fatal in nine of them, which is little short of the mortality from inoculated rinderpest in these animals. In six of them, however, only 5 c.c doses of the mixture were used, and although in proportion to the weight of the animals and the amount of bile furnished by them in comparison with those of South African animals, this dose is a relatively large one, yet exception might possibly be taken to it as being too small. In five of the other cases however, 15 c.c. doses were used, and in the remaining one 25 c.c., so that this objection cannot be urged against these, yet the results were similar in the two series, with the solitary exception in No. XI. Again, in three of the experiments, biles were used which were originally foul smelling, while Edington advises that only sweet smelling ones should be used. This was done on purpose because such a large proportion of the biles obtained from these animals after death are foul smelling, that unless they can be utilised the method could have very little practical value, and it is worthy of note that two such biles, which were used on the eighth day after mixing with glycerine, caused no abscess formation, while, strange to say, it was in one of these cases that the solitary success was obtained so, if this is excluded as not being strictly

in accordance with Edington's instructions, the results are as bad as they could be, for the two animals which did recover had extremely severe and altogether unmodified attacks of rinderpest. Under the circumstances recorded it is impossible to discuss the relative immunising properties of biles which were used soon after mixing with the glycerine, with those kept for a long time first, although it may be pointed out that the one success was obtained with a bile which had been kept but eight days, and the two cases which recovered with ones of 15 and 32 days old, but, on the other hand, equally early biles were followed by fatal results. Three cases in which natural infection ensued on the 2nd, 4th, and 11th days, respectively, only confirm the experience of South Africa that immunity does not result before the 10th day, up to which time they must be guarded from infection.

It must, then, be regretfully admitted that the glycerine bile method not only fails to confer immunity on Kumaon hill cattle, but actually is fatal to them nearly as frequently as is inoculated rinderpest.

Filtered Bile Method.

As the object of adding glycerine to rinderpest biles in Edington's method of inoculation is to destroy the rinderpest virus which Kolle has shown to be present in bile, it appeared to me that this might equally well and much more expeditiously be accomplished by passing it through a porcelain filter, and so gain the eight days which Edington advises should be allowed to elapse before using the glycerinated bile. Foul smelling bile would also be rendered innocuous by this process. A series of animals were, therefore, inoculated with bile which had been filtered in this way.

(1) *Filtered Bile in Plains Animals.*

A series of plains animals were inoculated with bile which had been passed through a porcelain filter, all kinds being used except the very few which were red with blood, thin and light brown in colour. After ten days had elapsed they were inoculated with rinderpest blood with a view to inducing a mild attack of the disease, and so securing lengthy immunity in a manner parallel to the glycerine bile method of Dr. Edington. The following are brief notes of the experiments :—

Summary.

Taking the whole series of ten experiments, good reactions were obtained in six of them and a doubtful one in another, while there was no reaction in the remaining three, a much larger proportion of favourable reactions than in the corresponding glycerinated bile series, while in both series one animal had a somewhat severe attack of rinderpest. If, however, the good reactions in the last four cases of this series, which were done with the same biles as the last four in the glycerine bile series, was due to a falling off in the immunising powers of the filtered bile as compared with the glycerinated gall, then these last reactions are not altogether satisfactory. But if, on the other hand, they are due to the difference in the virulence of the blood used in the two series, as appears to be equally probable, then they are not strictly comparable.

With regard to the immunity following the filtered bile, in the absence of any reaction following the injection of blood but little can be said, as sufficient time has not yet elapsed to allow of its being adequately tested, but in several cases it has been found to have lasted up to two months, and may last longer, although the fact that temperature reactions in some cases followed the injection of virulent blood at about that period after the original injections, appears to indicate that it would not have lasted much longer in them, so it will seem to be very likely that the immunity will last about three or four months as it did in South Africa, which will usually be long enough to protect the animals against the particular outbreak for which they are inoculated.

(2) *Filtered Bile in Hill Cattle.*

Eight bulls were inoculated.

Summary.

In the above eight experiments fatal rinderpest resulted from the blood injection in five, while in two of the other three a very mild attack occurred in one and a slight temperature reaction only in the other, and in the remaining one no disease at all resulted, but it is just possible that this animal may have been naturally immune, although this a very rare event in these hill animals. These three animals were tested by the injection of 10 c.c. of virulent blood at periods after the original bile inoculation of from two to four and a half months, and in each case they were still immune, no temperature reaction even occurring.

Although, then, these results were very unfavourable, yet compared with those obtained with the glycerinated bile method in hill animals they are not so bad, especially when it is borne in mind that larger doses of blood were used in the former as three out of eight gave good results, although the glycerinated bile only gave a mild attack in one out of twelve, so that, as was found to be the case in plains animals, the filtered bile gives at least as much immunity as bile that has been glycerinated, and it may be used safely in the case of any animals in which the latter gives favourable results.

(*To be continued*).

VETERINARY SOCIETIES.

BORDER COUNTIES VETERINARY MEDICAL ASSOCIATION.

A meeting was held at the Bush Hotel, Carlisle, on Friday, the 7th December, Mr. W. C. Croudace, Haltwhistle, the President, was in the chair, and there were also present Messrs. James Lindsay, Dumfries ; Garnett, Windermere ; J. Armstrong, Penrith ; Troughear, High Hesket ; R. Craig Robinson, Carlisle ; Joseph Hewson, Carlisle ; J. Little, Junr., Abbey Town ; John Steel, Wigton ; Joseph Lyons and H. Thompson, hon. sec. and treas., Aspatria.

The minutes of last meeting, on the motion of Mr. Hewson, seconded by Mr. R. C. Robinson, were taken as read and signed by the Chairman.

Letters of apology for absence were received from Prof. Dewar, Edinburgh ; Mr. Inglis, Forfar ; Mr. Augustus Taylor, Prof. McCall, Mr. Jacob Howe, and Prof. W. O. Williams.

Professor Williams wrote (to Mr. Thompson): "Will you please convey from the members of the family of my late dear father our sincerest thanks to those of your members who were present on the saddest of days, the 15th of November. We highly appreciate the honour they did our dear father, and shall never forget their sympathy to us."

Fees Paid by County Authorities.

Mr. Thompson read replies from various societies with respect to the resolution passed by the Border Counties Association that the fees paid by county authorities to veterinary surgeons for inspection under the Contagious Diseases (Animals) Act be on the same scale as those paid by the Board of Agriculture. The North of Scotland Society, at a meeting at Aberdeen, had passed a similar resolution. The Central Veterinary Medical Society, London, wrote approving of the resolution. The Manchester Association resolved to join the Border

Counties in any action they might take. The North of England (Newcastle) have unanimously passed a similar resolution. The Stockton-on-Tees Society approved of the resolution and hoped that some action would be taken to have the scale of charges revised. The Secretary of the Eastern Counties Society, Norwich, wrote :—"At a meeting of the Society at Yarmouth, the subject was discussed of the fees paid by county authorities. The President expressed the opinion that however much we talked about it we would not get them to pay the same fees as the Board of Agriculture. It was moved and seconded that the circular lie on the table.

Mr. C. B. HODGSON, Clerk of the Cumberland County Council, wrote :—"Your letter of July last was laid before the General Purposes Committee at their meeting on the 19th of October, and I was directed to write and inform you that this committee cannot see their way to recommend the County Council to make any alteration in the scale at present allowed."

Mr. THOMPSON added with regard to the reply from the Eastern Counties that they must be a very easy sort of people, perhaps because south country folk were not so go-ahead as they were in the north. (Laughter.) It was very weak business to send such a letter. The members of the profession must not let the matter rest, as it was only by agitation and sticking to the work they could get what they wanted. (Applause.)

Mr. GARNETT said he was certainly encouraged by the replies. Everyone would admit that they were underpaid by the county authorities as a rule. He would like to see a person nominated from each of the societies in favour of going on with the matter, and circularising all the County Councils in the country, and insist on having this, otherwise the members of all these societies would refuse to take inspection duty from them. Would the National Society take it up?

Mr. THOMPSON said he thought it was a matter the Border Counties would have to fight for themselves for a time. Let them get delegates from the societies to draw up a scheme to send to the County Councils. They had taken the initiative—let them go on with it.

Mr. GARNETT moved that the Society ask other societies to appoint a delegate for a meeting in Manchester or elsewhere to consider the subject, and that Mr. Thompson convene the meeting.

Mr. ARMSTRONG seconded the motion on condition that the delegates were not put to personal expense.

The motion was agreed to.

VOTES OF CONDOLENCE.

The PRESIDENT said that since last meeting one of the figure heads of the profession had passed over to the great majority—the late Principal Williams, of the New Veterinary College, Edinburgh. He would be greatly missed. It was a gap that could not easily be filled and a great loss to the profession. They had also lost one of the members of this Society through death, Mr. Martin, of Appleby, which they would all be grieved to hear about, it was due to their memories to pass a vote of condolence to each of their families. He moved that the Secretary be instructed to write a letter of condolence to Prof. W. O. Williams, son of the late Principal Williams, and to the family of the late Mr. Martin.

Mr. JOHN ARMSTRONG seconded the motion.

Mr. LINDSAY said that at a meeting of the Scottish Metropolitan Society at Edinburgh on Wednesday it was resolved to join in a public movement to raise a memorial to the late Principal Williams. This Society might also join.

Mr. ROBINSON seconded this

Mr. THOMPSON said he had received a circular from the students of the New Veterinary College, Edinburgh, (a copy of this will be found on p. 328). The late Principal Williams had frequently assisted that Society at a time when they were in want of a subject, and he would like to do his best to help to perpetuate his memory. What the students proposed was, he thought, very appropriate, and there was hardly a member of the profession who would not contribute.

Mr. GARNETT and other members felt a strong desire that the Society should support a memorial from the profession alone rather than one from the public generally. It was agreed to acknowledge receipt of the letter from the students, and to say that the Society would do their best for a memorial, and only awaited further developments.

VETS. AT THE FRONT.

Mr. THOMPSON mentioned that there was one V.S. from the Border Counties Society at the front—Mr. William McKie, who was doing his duty well. An old pupil and assistant of his own, Mr. Fred. Shaw, was in the 18th Hussars, and was captured by the Boers early on and had to sit eight months in the jug—(laughter)—but he was now stationed at Middleburg attending to hospital work. Another assistant he had had gone to the front—Jimmie Lund, who hailed from Kelso.—(Applause.)

NEW MEMBER.

Mr. Hewson and Mr. Lyons nominated Mr. JAMES MOORE, Appleby, as a member of the Society.

NOMINATION OF PRESIDENT.

Mr. THOMPSON read a note from Mr. John Little, Abbey Town, stating that he was sorry he could not see his way to accept the invitation to become President of the Society. Mr. Thompson accordingly proposed Mr. Steel, of Wigton, who was one of the oldest members of the Society.

Mr LINDSAY seconded the motion, which was carried with applause.

AN EXHIBIT.

Mr. STEEL exhibited a morbid specimen of a hydro-calcareous testicle, taken from a two-year-old rig. Its weight was 3 lbs. 4 oz. He stated that the animal was a two-year-old cart gelding. Nothing amiss was noticed about it. He cut through in the usual manner, and found the cord fearfully enlarged, very soft, and the blood vessels a tremendous size. He found it impossible to bring the bony portion through the canal. He ruptured the cord and extensive hæmorrhage ensued. He severed the whole lot, and the morbid testicle fell back into the abdominal cavity and lay there. The horse apparently did all right for three days, then suddenly turned dull and died from peritonitis in three hours after the attack. He had operated on a great many rigs in the last twelve years, about 100 in all, and he found no difficulty in operating where the testicle was on the off-side when the animal was on its back, *i.e.*, the near side when standing. But he had never operated on the other side as in this case without serious complications or a nasty recovery. (*See next page.*)

Mr. LYONS said Mr. Inglis operated on one on the near side when the horse was on its back, which was like this specimen. It contained nearly a pint of fluid, but no bone.

In reply to Mr. Armstrong, Mr. Steel said he made his way through the canal as near as he could get, and on finding the internal ring he broke his way through that.

Mr. ARMSTRONG said he had always found it best never to trouble about the ring, but to get as far above it as possible, and get to where there was least resistance, and through the peritoneum if he was satisfied that the tesicle was not in the ring.

Mr. LINDSAY said he had operated on two rigs ten days days ago. One died sixteen hours afterwards, and

it was on the near side when down. There was no disease of the testicle.

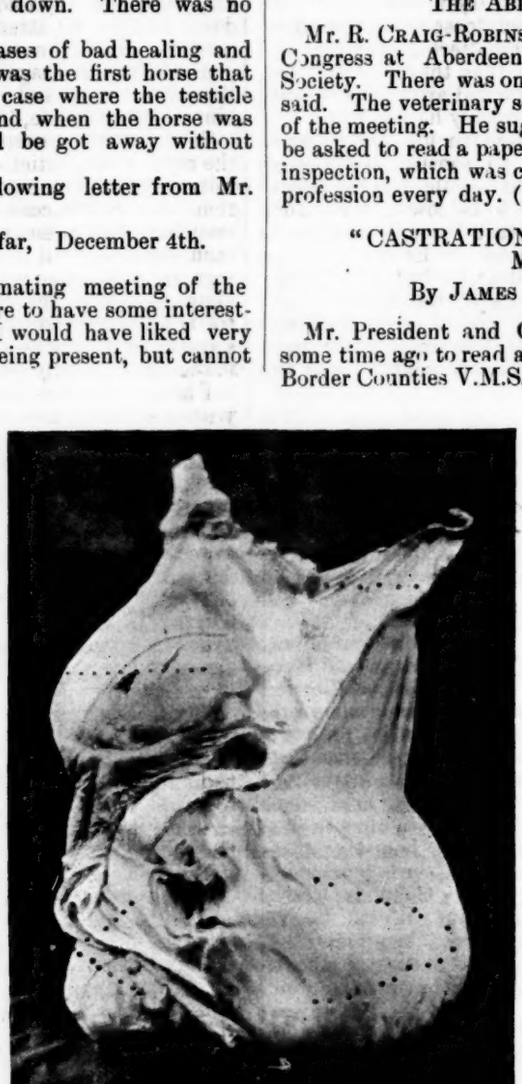
Mr. STEEL said he had had cases of bad healing and difficulty in operating, but this was the first horse that had died. He had a previous case where the testicle was nearly as big, but flabby, and when the horse was in a certain position it could be got away without difficulty.

Mr. THOMPSON read the following letter from Mr. Inglis:

Forfar, December 4th.

Dear Sir,

I received your circular intimating meeting of the Border Counties. I notice you are to have some interesting subjects brought forward. I would have liked very much to have had a chance of being present, but cannot possibly get away.



Testicle

Bony portion

Cord

Cystic portion contained 10 oz. fluid

If you wish to have a fair idea of my experience in the rig business look up the Journal dated March, 1896, page 212. You will notice on page 214 I record two cases where the testicle contained fluid of a large quantity. The first one I did at Aspatria was very large, and had to be ruptured before I could get it through the opening. I formerly used the trocar and canula to remove the fluid before getting out the cystic gland, but I found that the fluid did no harm to the abdomen if allowed to be retained after rupturing, and now in the majority of cases I rupture the cyst inside.

Trusting you are all well and that you will have a good meeting.—I remain, yours faithfully,

T. M. INGLIS.

Mr. ROBIMSON said he knew of a four-year-old which had both testicles retained in the abdominal cavity, yet did not possess the propensities of an entire.

Mr. THOMPSON said he examined the sac of the specimen exhibited by Mr. Steel, and found in it a lot of necrosed tissue and horse hair along with the watery fluid. This was a very interesting specimen, and showed that the retained testicles of rigs were more or less of a morbid character. They were much indebted to Mr. Steel for bringing the case forward. (Applause.)

THE ABERDEEN CONGRESS.

Mr. R. CRAIG-ROBINSON reported upon his visit to the Congress at Aberdeen in August, as representing the Society. There was only one fault with the meeting, he said. The veterinary section was left too near the end of the meeting. He suggested that Mr. McPhail might be asked to read a paper to the Society on practical meat inspection, which was coming more into the hands of the profession every day. (Applause.)

"CASTRATION BY THE STANDING METHOD."

By JAMES LINDSAY, Dumfries.

Mr. President and Gentlemen,—When I was asked some time ago to read a paper before the members of the Border Counties V.M.S. I felt somewhat diffident, knowing in the first place that there were older members of this Society who were better qualified to bring matters of interest before this meeting than I am, and secondly being aware of my shortcomings in that direction; only after deciding to do so, I naturally set my mind to seek out a subject which is of great interest to all, and on which I trust all will express their opinion—I shall describe the operation as I practise it myself—I have performed the operation on animals of all ages except foals, I prefer good strong yearlings or animals above that age as their testicles are generally better developed. I always recommend that thin, weakly, or backward yearlings be left till the autumn as they will improve with a summer's grass, and they are then easier castrated, the testicles being better developed.

When a client desires me to perform the operation the first question I put to him is "Have you examined your colt? Are both testicles down?" And if his reply is in the negative I ask him to do so and let me know, as it is rather awkward if you drive nine or ten miles to find one testicle down; and another reason is—and a very important one—he will have had the colt haltered before you go to operate on him. I seriously object to "handling" and "castrating" any man's colt.

How many clients do the veterinary surgeon go to and find the colts running unhaltered, loose in a paddock or shed? And you will find that haltering a colt for the first time generally takes longer than the operation, and also that they are not so tractable and are usually heated prior to the operation if not previously haltered.

Having got a good strong twitch on his nose, I have the colt brought out of his box if I consider it too small to perform the operation in. As a rule I prefer operating outside, as if they happen to be cow-kickers, plungers, or ones that fall down either through temper or sulkiness it is always advantageous to have room to retire. A good man at his head and a boy to hold the instruments is, generally speaking, all the assistance you require. After having the colt placed in a corner with his right side against the wall, I examine him myself, and if I find no abnormalities present I start the operation.

After thoroughly disinfecting my hands and instruments with either carbolised glycerine or carbolic oil, I grasp the right or off testicle with my left hand, getting the testicle as tightly as possible between my finger and thumb. A bold incision is made through the scrotum on to the testicle, about half an inch from the median raphe, and experience has taught me that the bigger the wound the better the colt will do. If you make a small wound and squeeze the testicle through it, the blood will coagulate inside the scrotum and you will have a considerable amount of swelling, which you would never have had if there had been a good sized opening to allow the escape of the blood. Having got the testicle out I then proceeded to slip on the ecraseur right over the epididymis. Generally when the testicle is grasped it is pulled up by the cremaster muscle, but with a little pressure it soon relaxes. I then screw it slowly off, and the second testicle in the same manner, and standing at the same side. I always screw the testicle off slowly, as there is less fear of hæmorrhage. If the colt should be a two-year-old or older don't be in a hurry in getting the testicles off; allow the chain to remain tight on the cord for a minute or so and screw slowly.

After the operation is finished I usually squeeze any blood out of the scrotum that may have coagulated there. I always like to see them bleed for five or ten minutes after the operation, as I know that they will then make a good recovery without much swelling, that is provided everything goes right. Always insist on having the colt put into a good clean roomy loose box at once, with some fresh straw and bedding, give him a little oats and bran, a little grass if in spring time, and turn him out next day if the weather is favourable, bringing him in at night for a week; but I have seen them turned out the day after the operation and never brought in again, and made an excellent recovery. I leave instructions "Do nothing to him, but if he should swell cleanse your fingers thoroughly with a little carbolised glycerine and open up the wounds."

I admit thre are some colts that cannot be done in the manner I have described, being so wild that they will not allow one to touch them, far less put the knife on them, and I should consider it not only dangerous but foolish to attempt to castrate them standing. I had a two-year-old Clydesdale colt last spring that when I had the first testicle out of the scrotum would not allow me to grasp it, and I would have defied any one to have castrated him standing. I had him cast after waiting fully twenty minutes on assistants coming, castrated him with the ecraseur, and he made a splendid recovery, was put out the following morning, and never housed or touched again, being so wild it was impossible to get near him.

I advise light ecraseurs being used for the operation, as having too heavy a one, and the colt either springing forward or falling down, the cord might be torn and there might be some trouble in getting the hæmorrhage stopped. If a colt is inclined either to fall or lie down I order the attendant at the head to give him a good slap on the nose or walk him quietly on, when you can easily manage to screw the testicle off. If he should fall down and is inclined to lie I then castrate him in that position, leaning over his back.

Some of the abnormalities I have come across are—the cord of the testicle twisted, and ruptures. Ruptured colts require to be cast and done by the covered operation. I have occasionally seen colts do alright, no swelling at all present till perhaps the 10th day, and in such cases you will generally find the hygienic surroundings are bad. The wounds require to be reopened and allow an exit for the discharge. Keep the wounds open for three or four days and give plenty of exercise; in some cases it may be necessary to puncture the sheath if it should be greatly swollen.

I have only used the clams once, and that is eight years ago, on a three-year-old, when I had not so much confidence in the ecraseur as I now have. I consider the clams the most barbarous operation ever practiced by the veterinary surgeon. The idea of fixing two pieces of wood over a tissue in such an age as we are now living seems not only cruel in the extreme but very unsurgical—not to talk of unprofessional. Such a method not only exposes the cord, but also bruises it. All the time the clams are on the horse will be in a continuous torture, and when they are removed there will be some difficulty in getting the cords up through the scrotum again, as they will be adherent to the edges of the wounds.

Besides, it renders a second visit to the colt necessary to remove them, and you will not come across many clients who will pay for a second visit to a castrated colt. I have used the "Reliance Castrator" on two four-year-old ponies and they ultimately made a good recovery, only the swelling was considerably greater than those done by the ecraseur, and I strongly advise those veterinary surgeons who have not practised castration by the latter instrument to give it a trial.

Since I started castration by the standing method nine years ago I have only lost three colts, one of them was a two-year-old Clydesdale, the bleeding had stopped when I left about midday. Next morning, on the owner going into the yard, the blood was running out of the box. On opening the door he found the colt standing tucked up, and the penis hanging out, but very little hæmorrhage present, which he very soon stopped. Next morning he sent for me, and on my arrival I found him not only affected with paraphymosis but amaurosis, and in those conditions he remained. Both were undoubtedly due to the excessive hæmorrhage. The wounds healed all right, he put flesh on rapidly, was put out to grass all summer, but he was never able to withdraw the penis, nor did his sight return.

Travelling gelders I am glad to say are not so numerous in Scotland as they are in England, but there is still an odd one here and there. It is perfectly galling to know that members of the Royal College of Veterinary Surgeons should employ those "fraternity" to castrate their colts for them. Is there no clause in the 1881 Act to prohibit a man from charging fees for *any* operation on a horse unless he be an M.R.C.V.S. or Registered Practitioner? I think there is, and it should certainly be put into force. Dentists require a diploma, and why should not castrators of the domesticated animals. In going on and allowing unqualified men to reap the fees which we justly deserve. We are allowing ourselves to be robbed of our rights before our eyes. When cases die as the result of an ignorant operator they are kept dark, but allow such to happen with a qualified veterinary surgeon and you will hear it far and near. One of the first steps by which travelling castrators can be extinguished is for the veterinary profession to show that hæmorrhage can be stopped by surgical methods and dis-

card the actual cautery and clams, as any "common blacksmith" or "pillow pointer" can practice that branch of surgery.

Now, gentlemen, I have brought before you nothing new. Societies are essentially for discussion, and the subject is of great interest to all country practitioners, I therefore hope to hear a hearty debate.

Discussion.

The President said he was personally very much obliged to Mr. Lindsay for coming forward and giving a paper on such a practical subject. There was plenty of room for discussion. He might say he had never castrated a colt standing, nor did he intend to do so. He had too much respect for his wife (Lftr). He could quite see when there was a colt with a weak back or something of that sort, which would be risky to cast, this standing method would answer admirably. He intended to stick to the old method of casting and actual cautery.

Mr. Steel said he castrated 70 on the average in the year, and cut the great majority of them standing—with the ecraseur, though the safest way, with the best results, was to lay them down on the back and take the old fire-iron. The ecraseur was a nice operation, but it frightened many timid old farmers to see the blood. He generally opened both sides of the scrotum with the knife and took both glands away at one time from the same side. This could not be done with two-year-old colts, both the testicles would not go into the ecraseur at the same time. No clot was ever found in the scrotum if the animal had bled three or four minutes after the operation. If every farmer would give the scrotum a gentle pull down about 24 hours after the operation, they would have very little complications. He had had very few cases of scirrhous cord, but he had had adhesions.

Mr. Garnett thanked Mr. Lindsay for his able paper and said that wherever a body of veterinary surgeons met together they would always be found to have different methods of castration. Mr. Lindsay looked with contempt on the good old iron and clams. He thought they were the saving of the veterinary profession. A perfectly aseptic wound was not assured even with the knife, and it was for this reason that the hot iron proved the sheet anchor in veterinary operations. He had never done an operation standing and had never seen it done. No veterinary could call the use of the clam a surgical operation. It was simply barbarism. (Hear, hear.)

Mr. Armstrong said he had done the operation standing, and he had come to the conclusion that he had too much respect for his "wife's husband" to continue the practice. For that reason he liked to cast them. He agreed with Mr. Garnett that the true way to antisepticise a wound was to make it with a hot iron, when they would invariably meet with success.

Mr. Hewson said he found a good many cases of hernia as a result of using the hot iron. Last season he had cast horses and used the ecraseur. He had not had so many cases of wind-cord.

Mr. Steel said he had found no herniæ, but had operated on several cases for wind-cord, which was some slight damage at the end of the cord. In two cases it was nothing but the omentum, and he cut it off with a pair of sharp scissors.

In reply to Mr. Armstrong, Mr. Steel said the so-called wind bags contained sometimes a little pus, others straw coloured fluid which he always let out.

Mr. Armstrong asked if the matter was there for a length of time would there not be pyæmia or septicæmia? With regard to the scirrhous cord, he had seen several of them scraped with fair success. It occurred as a rule in colts that had been castrated as yearlings and was prevalent in animals rising three years old.

Mr. R. Craig Robinson said he had castrated horses standing, but he preferred to cast them. He had tried a good few instruments but had reverted to the old-fashioned iron, which he had never had trouble with.

Mr. Little said he believed in the hot iron. The wind bag at the end of the cord seemed to contain an accumulation of fluid. Uusally the end of the bag adhered to the skin of the scrotum. In one or two cases the fluid became absorbed without any operation.

Mr. Lyons said with the hot irons the testicles were removed with very little hæmorrhage, and it was not necessary to go back two or three days afterwards to open up the scrotum. If he was asked to castrate a horse standing he would do so, but if he used his own discretion he would take the hot iron.

Mr. Troughear also spoke in favour of casting and the use of the hot iron. He generally hungered the colt twelve hours before the operation. Mr. Lindsay credited England with having more quack castrators than Scotland, England had more quack medicine vendors as well. He had a letter from Mr. W. Hunter, a V.S. in Newcastle-on-Tyne, the person he mentioned in his letter travelled a horse every year in his district and went far and near to castrate colts for 5s. each. He got his education from a Scotch V.S. who learned him the method.

Mr. W. Hunter, Newcastle-on-Tyne, wrote:

"Dear Mr. Croudace,—I am sorry I will not be able to accept your kind invitation on Friday, but I would like you to give the members of your Association my experience of an afternoon out with Mr. Lambert, stud groom to W. R. Trotter, Esq., of Stocksfield. We left Newcastle one Saturday afternoon this spring and went to Morpeth. Drove two miles East to a farm where Lambert operated on a yearling hunting colt in the standing position. He turned the colt's head to the door, put a twitch on his nose and tied a bag over his eyes. Standing on the near side he reached to the off testicle and with one gash backwards which penetrated the substance of the gland, out it came, he then drew it well down which he said prevented the colt from retracting it. He followed suit with the near testicle on which he placed the ecraseur *first*. On screwing the instrument the colt tried his best to lie down towards them, but was prevented doing so by Lambert and a man who stood at the near quarter holding him up by main strength; this colt was finished in about three minutes.

We drove back to Morpeth and went seven miles to the West to Stanton, where he first operated on a Hackney yearling colt, this animal threw himself down twice in desperation from agony when the chain was tightened. Had the instrument not fallen sideways it would have penetrated his abdomen and killed him. Fortunately the colt was no worse, but this was more good luck than good management. Each time he rose the ecraseur was dangling between his legs.

The third and last colt was again a fine bred one, and when the chain was tightened on his cord he sprung off all four feet, giving one desperate leap, and had not the man who held the twitch pulled his head to one side he would have knocked his brains out against the wall. This colt bled profusely, blood running from him in a stream as thick as a straw. This Lambert thought nothing of, and after having tea the farmer found the bleeding had ceased. Lambert asked me what I thought of the operation, and I told him I thought very little indeed of it, as they had no command of the colts, and they could throw themselves where they liked. He said these three were exceptionally restive ones, and that many stood until the operation was finished without moving.

No antiseptics were used, the instrument was wiped and put in a little bag which he carried in his pocket for future use. Thus finished my afternoon out and I was pleased I went, for I decided to stick to the good old fashioned plan of securing the colts with the ropes and searing the testicles off with the actual cautery.

Mr. THOMPSON said Mr. Lindsay's paper, and the discussion, had been of a very practical character. He had never tried a standing operation, and never would. It was too much of a mountebank practice for him at his time of life. He would stick to the old road—casting and the hot iron.

Mr. LINDSAY, in reply, referring to Mr. Steel's remarks, said he had heard of a V.S. who took both testicles out of one wound. With respect to the clot in the scrotum, there need be no anxious moments if the colt bled five or six minutes, and the wounds generally heal a great deal better than after the use of the hot iron. There would be no wind-ball if a good opening was made. Where a wound healed too quickly they need not be frightened to put in the knife and let the water out. With regard to Mr. Hunter's letter he would have gone with no quack to see him castrate a colt. As regards a Scottish veterinary learning him, he was not responsible for them all. (Laughter.) He objected to any man charging a fee to which he was not entitled. There was only one travelling gelder in the South of Scotland and he came from England. (Laughter.) He charged 3s. 6d. and was a Carlisle man.

On the motion of the President, seconded by Mr. Armstrong, a vote of thanks was passed to Mr. Lindsay for his paper, and another to Mr. Steel for exhibiting the specimen.

ROYAL COUNTIES VETERINARY MEDICAL ASSOCIATION.

An ordinary general meeting was held on Friday, November 30th, at 10 Red Lion Square. The President (Mr. Sidney Villar) occupied the chair, and the other members present were: Prof. Pritchard, Messrs. E. Percival Owen (hon. sec.), J. Sutcliffe Hurndall, Wm. Wilson, Jas. F. Simpson, F. W. Wragg, W. G. Flanagan, Jas. Sherley, S. H. Slocock, A. L. Butters, and E. C. Howard. The visitors attending including Mr. Alex. C. Cope (President R.C.V.S.), Professors M'Fadyean, and McCall, and Messrs. E. Lionel Stroud, E. E. Seldon, David Pugh, F. G. Sampson, Matthew Clarke, and Hugh Singleton.

The minutes of last meeting were read and confirmed.

THE LATE SIR HENRY SIMPSON AND PROFESSOR WILLIAMS.

The PRESIDENT said it would be the the wish of them all, before proceeding with the business of the meeting, that they should express their sense of the loss the profession had sustained by the death of two of its eminent members since their last meeting. Sir Henry Simpson, as they knew, was one of the founders of the Royal Counties Association, one of its presidents, and one of its sincere well-wishers and supporters; and he was sure they would desire to express their condolence and hearty sympathy with Lady Simpson and the family. (Hear, hear.) Professor Williams of Edinburgh was an honorary associate of that Society, was esteemed and beloved by all who knew him, and known all the world over by his books. He proposed that the Secretary be instructed to convey to Lady Simpson and family, and to the relatives of the late Professor Williams, the sincere condolence and sympathy of the members of that Association with them in their great bereavement. (Hear, hear.)

Mr. WILSON, in seconding the resolution (which was carried unanimously) fully endorsed all that the President had said.

Afterwards a letter was read from Mr. Richard Scott, of the New Veterinary College, Edinburgh, asking the co-operation of the Association in the movement to establish a memorial to the memory of Prof. Williams. It was resolved, on the proposition of Mr. Butters, seconded by Mr. Slocock, to discuss the subject at the next meeting, and the Hon. Sec. was asked, in acknowledging the letter, to express to Mr. Scott the sympathy of the meeting with the movement. (The letter will be found at p 328).

FINANCIAL.

The Hon. Sec. (Mr. J. P. S. Walker) being unable to attend the meeting, an abstract of the accounts for the year, prepared by him, was read by Mr. Owen. It showed balance brought forward £32 13s. 2d., members' subscriptions paid £21 10s. 6., total £54 3s. 8d. Accounts paid £8 9d. 5d., leaving a balance in the bank of £45 14s. 3d.

ELECTION OF OFFICERS.

The office-bearers for the ensuing year were unanimously chosen as under. President: Mr. George Edward King, of Abingdon; Vice-Presidents: Messrs. F. W. Hanks, Mulvey, J. H. Wilson, and S. Villar; Hon. Treasurer: Mr. J. P. S. Walker, of Oxford; and Hon. Secretary: Mr. E. Percival Owen of Thame.

NEW MEMBERS.

Mr. ARTHUR H. STROUD, of Oxford, and Mr. J. E. LLOYD STILL, of Surbiton, were unanimously elected members of the Association.

PLACE OF NEXT MEETING.

On the motion of the President, seconded by Mr. Wragg, Reading was unanimously selected as the place for next (February) meeting.

COMPLIMENT TO PROF. PRITCHARD.

Mr. J. F. SIMPSON, in accordance with notice given by him at the last meeting, moved that a gentlemen who had been a member of the Association ever since its formation who had been a member of nearly all the Associations in the Kingdom, and who had done good work for them all, should receive from them the compliment of election as an honorary associate. Without further words he would name the gentlemen, as he believed it would be the greatest compliment to allow the members to recall to their minds the acts of Prof. Pritchard rather than to dilate upon his fitness for the position he proposed they should elect him to, so that he would conclude by proposing that Prof. Pritchard be elected an honorary member of the Association. (Applause.

Mr. FLANAGAN had very great pleasure in seconding the proposition. There was no member of the profession whom they would be more pleased to see in that position. (Hear, hear.)

The resolution was carried by acclamation.

Prof. PRITCHARD, in response, said he was really very much obliged to the meeting for the honour conferred upon him. He was one of the original members of that Association, and—as Mr. Simpson had said—he had been, and still was, a member of many similar bodies. It has always been a pleasure to him to assist in every way he possibly could the objects of Associations of that description. He could not but call to mind that he served in almost every office in connection with the original Veterinary Medical Association. Some of them would learn before long that he did something in connection with that Association that probably would lead to results of which none of them would be ashamed, and of which some around that table as members of the Royal Counties Association would be very proud to know. Although he was getting old, he had not done yet, but hoped that in the years to come he might be spared to do something more for the Associations, and he should not forget to try and do something for the Royal Counties Association. (Applause.)

A New Splint.

Mr. David Pugh showed and explained a novel pair of splints. He said: I thought it would interest you if I brought to your notice a pair of aluminium splints I devised to straighten a foal's limbs which were very much bent. The subject for treatment was a valuable foal by St. Simon, and which belonged to one of the best sportsmen in the country. You are aware that all foals legs are bent more or less irregularly when born, but with few exceptions the bend takes place from the joints themselves, each long-bone in itself being straight. With age and strength these limbs assume the direction usually desired, but when an individual bone is much bent, especially laterally, it will never straighten without some mechanical aid. This foal had both metacarpal bones bent, the near fore 2¾ inches and the off fore 1¾ inches out of the perpendicular.

I treated the more distorted one first, leaving the other as a test leg, because I thought the owner might say that the foal would have got alright without aid if I treated both together. I applied the splint for half an hour three times daily for a fortnight until the foal got used to it, then it was left on altogether during the day. In about two months the limb was fairly straight. I was requested by the stud groom to commence treating the second leg because, as he said, "It is getting worse." I did so and am now pleased to say that both his forelimbs are perfectly straight. He is now considered both the best looking and fastest foal of the year at that stud.

You see the splint is composed entirely of aluminium, the upper part is applied to the inside of the fore arm and is attached to the lower half by a joint opposite the knee, this joint allows perfect movement, the foal being able to lie down etc. quite comfortably.

The hook arrangement which fits round the fore arm and metacarpals is to stop the splint slipping. It is simple in construction and very easily applied.

On the proposition of Mr. W. Wilson, seconded by Mr. Hurndall, the meeting accorded by acclamation its cordial thanks to Mr. Pugh for his kindness in bringing the splints and explaining them in such an interesting manner.

ANTHRAX.

By D. Pugh, F.R.C.V.S., Sevenoaks.

Paper prepared for the meeting in June, 1900.

The disease is produced in man or susceptible animal by the introduction into their economy of a specific bacillus, or its spore—the *Bacillus Anthracis*. It is also known as Splenic Apoplexy, Gloss Anthrax, Charbon, Splenic Fever, etc. When it attacks the human subject it is known as Wool Sorters' Disease and Malignant Pustule.

Although anthrax is one of the most widely distribu ted diseases and known to the ancients its cause was not known until the present century. Pollander, in 1849, discovered rod-like filaments in the blood of animals which had died of anthrax. Subsequently Delafond, Gruby, and Devaine independently observed these rod-shaped bodies in the blood, the latter proving their invariable presence in the blood of animals having died of this disease. Of more recent date Pasteur, Koch, and others have thoroughly studied the life history of the bacillus.

The bacilli are stiff, straight rods, 5 to 7 mm. long, the ends of which are square-cut or truncated, but when stained with gentian violet and treated with acetic acid they appear to be more or less convex. They are non-motile. Viewed in preparations from the animal body, these rods appear singly, or in twos or threes. The so-called liptothrix filaments are not found in such preparations, nor are spores formed in the living body. This may be due to a deficiency of oxygen. These same preparations, stained with methyl blue, the rod is seen to be made up with a central mass of protoplasm bounded by a gelatinous membrane, the protoplasm takes the stain the membrane does not. This envolope is of great value in diagnosis to distinguish anthrax bacillus from putrefactive bacteria which approach it in size and shape.

Any of the hydro-alcoholic solutions of the basic aniline dyes as fuchsin, methyl blue, gentian violet are effective. It does not stain well by Gram's method.

Culture and Attenuation.

An artificial culture can be made on almost any medium. It grows well on blood serum, agar, broth, gelatine and potato. The spores develop on agar culture in 24 to 36 hours in the presence of air. The spores from different sources have different degrees of resistance (Esmarch). The organism only grows on parts of the medium that are freely exposed to oxygen; the best temperature is 35° to 37° C. On agar it forms a grey shining pellicle on the surface. On gelatine it forms "white floccules," and after a day the gelatine begins to liquefy.

In an artificial culture the organism increases by fission and sporulation. If a covered glass preparation from such a culture be examined twenty-four hours after inoculation, you see a number of long wavy threads; these are the liptothrix filaments—(they are unbranched).

If these be observed more closely they are seen to be composed of segments, these segments are the bacilli which have been kept from separating, partly by the gelatinous membrane, and partly by the state of rest in which the medium has been. They are separated from each other by motion in the blood stream, although Koch says: "he has seen threads in the convoluted tubules of the kidney."

The bacillus or virus of anthrax can be attenuated; grown at 42·6° C. it ceases to form spores, and at the end of 24 days it is harmless. The organism tends to retain its acquired character, and one can obtain a species of varying virulence by stopping this incubation at different times.

This is Pasteur's method of attenuation—To confer immunity on cattle and sheep, Pasteur inoculated a culture and incubated it at 42·6° C. for twenty days. This he found was harmless to the larger animals, and moreover every artificial culture made from this one possessed the same amount of virulence. This he called his "first vaccine." He injected these cultures into sheep and cattle, and from this they derived a certain amount of immunity (they could resist stronger doses). To complete the immunity so that they could stand a strong dose, he injected 10 days after a culture incubated at 42·6 C. for 10 days (dose about 10 drops for sheep, 20 for cattle). A slight inoculative fever follows this, but little or no local swelling.

You must see that all instruments are sterile, and must be careful that only the animals that received the first vaccine get the second. This immunity lasts about one year, and is only of use to curtail outbreaks. In this country it is seldom necessary, because anthrax here appears as an enzootic.

Habitat of the Bacillus.

It exists in the blood stream, therefore you may expect to find it in every organ of the body. It is most numerous in the smaller arteries, veins, and capillaries, such as the alveolar capillaries in the lung, inter and intra lobular capillaries in the liver, and the glomerular capillaries in the kidney. Here it occasionally causes rupture, and the bacilli get into the tubules and affect the urine. In man and pig the bacilli are frequently found in the tissues.

Mechanically they act as emboli, giving rise to engorgement, and frequently to rupture and hæmorrhage. Small

hæmorrhages are a very common lesion in anthrax. Hæmorrhages into the brain occur occasionally and account in some cases for the loss of consciousness. The bacilli also gives rise to poisonous alkaloids and albumins, these act on the nerve centres and account for many of the symptoms.

The Virulent Matter.—Infection.

The organism is distributed in nature by sick animals during life, and by the carless handling of the carcases after death, but it does not multiply extensively in this and other temperate climates as a saprophyte. The bacilli itself may succumb to adverse surroundings, but the spore is very tenacious and keeps up the species.

The bloody discharges from the nostrils, mouth and anus are virulent. The urine in cases accompanied by hæmaturia contains the bacilli; the hæmaturia is the result of rupture of the glomerular capillaries. These discharges are deposited on the soil or on the flooring of sheds; they constitute areas of infection, the existence of which is kept up by the spore. On pastures the infection is prolonged by the spores also. It has been said that the hay off an infected area may carry the spore and contaminate elsewhere.

The subcutaneous œdema and the blood, immediately before and after death, contain many bacilli; these are set free if the carcases be opened or slashed.

Drinking water may be virulent if the stream of supply be contaminated (this may be done by burying a carcase near the stream).

The milk of affected animals may be virulent; the bacilli are in the mammary capillaries, the capillaries rupture, and the bacteria get into the acini and excrete with the milk.

Infection may take place through the alimentary tract by the animal eating food stuffs contaminated by the bacilli or their spores; such materials are flesh, milk, water, and hay or grass from infected areas. The bacilli itself is destroyed by the gastric juice, the spore however resists, and passes into the intestines, where it develops into the rod forms. In the intestines the rods spread over the mucous membrane of the villi; they push in between the epithelial cells and gain the lymph or blood stream. The result is a case of anthrax.

Cattle and sheep are mostly affected by intestinal anthrax, they may die without showing an acute cutaneous disease. Another way is by cutaneous inoculation. Infection by this method is rarer in animals than by the alimentary tract. It takes place through the medium of wounds scratches, and it is said also by the sting of insects. The material is carried to the wound by flies, hands of attendants, and by instruments.

Cutaneous infection is usually accompanied by a local lesion; this, in man, in known as carbuncle.

Individuals engaged in wool picking are occasionally inoculated on the fingers by contaminated wool; it gives rise here to a pustular formation, which in human medicine is known as malignant pustule. It tends to remain local, but may be inoculated to other parts of the body by scratching, etc.

Again, one may be infected with anthrax by inhalation. This is rarer in animals than in man, and in man is known as wool sorters' disease. Workmen engaged in wool sorting are known to suffer frequently from violent attacks of congestion of the lungs, which usually end fatally. On investigation these attacks are found to be due to the anthrax bacillus. The spores in these cases are inhaled, and either as spores, or after developing into bacilli, they pass through the pulmonary mucous membrane to gain the lymph and blood stream. It is said they may pass through the intact membrane between the cells.

(*To be continued.*)

ARMY VETERINARY DEPARTMENT.

From the *London Gazette*:

War Office, Pall Mall, Dec. 14.

To be Honorary Vet.-Lieuts.—Temporary Vet.-Lieuts. W. S. Mulvey and E. Morgan.

December 18.

12th Battalion I.Y. Temporary Vet.-Lieut. W. C. B. Revill, Veterinary Officer, resigns his commission.

Vet.-Lieut. A. Bate, I.Y., and Vet.-Surgeons W. Franklin A. J. Hines sailed from Cape Town in the hospital ship "Avoca" on Dec. 9, invalided home.

C.V.S. J. W. H. Masheter sailed from Cape Town in the "Canada" on Dec. 11.

C.V.S. S. L. Stephens and F. A. Moore were discharged from hospital to duty week ended Dec. 2.

Vet.-Lieut. Ridden, Canadian Mounted Rifles, and Vet.-Major Massie, Canadian Artillery Staff, left Cape Town for Halifax on the "Roslin Castle" Dec. 13.

Natal

V.-Lt. R. C. Cochrane joins 3rd Cavalry Brigade at Kroonstad	Oct. 20.
C.V.S. Chod and Moberly returned to England in ss. Scot.	Oct. 24.
C.V.S. Collyer posted to Maritzburgh.	
Anderson to Waschbank.	
V.-Lt. Tatam to Volksrust.	Oct. 26.
C.V.S. Scott proceeded to Johannesburg.	Nov. 9.

Cape Colony, etc.

V.-Capt. Blenkinsop arrived Heidelburg.	
V.-Lt. Tatam proceeded to Volksrust.	Oct. 27.
Coley to Belfast.	
C.V.S. Hoggan arrived Kroonstad	Oct. 30.
White proceeded to Middleburg.	Nov. 2.
Golden goes to Durban	Nov. 3.
Jackson to Bloemfontein.	
Christy to Port Elizabeth.	Nov. 4.
Butcher posted to Krugersdorp.	Nov. 9.
V.-Capt. Blenkinsop to Pretoria.	
V.-Maj. Forsdyke to Germiston.	
V.-Lt.-Col. Smith to Cape Town.	Nov. 13.
V.-Capt. Sharp to Pretoria.	Nov. 14.
V.-Maj. Pringle arrived at Kimberley	Nov. 18.
C.V.S. Welch posted to Kroonstad.	Nov. 20.

The Outbreak of Foot-and-Mouth Disease.

In consequence of the further spread of foot-and-mouth disease in Herts and Essex the Board of Agriculture on December 18th extended the closing order to include the petty sessional divisions of Saffron Walden, Freshwell, Hinckford South, and Buntingford, the boroughs of Saffron Walden and Chelmsford, and 11 adjacent parishes. Fresh outbreaks have been reported at Manuden, Stanstead, and Mountfetchet. At a meeting of the Herts Connty County Council Mr. A. H. Smith, M.P., was deputed to make representations to the Board of Agriculture with a view to the closing order being rescinded at as early a date as possible. The outbreak is greatly affecting the Christmas meat trade.—*The Times.*

PARLIAMENTARY.

In the House of Commons, on Tuesday, Dec. 13.

Horses and Mules in South Africa.

In reply to questions from Mr. Bayley and Mr. Trevelyan (Yorkshire, Elland),

Mr. Powell Williams said,—The numbers of horses landed in South Africa amounted according to last returns, to 117,730, and of mules 64,730. Five thousand six hundred and eighty-nine horses were lost on the voyage, and 1,997 mules. No reports have been received showing the numbers captured from the enemy or lost in the war, or the numbers now in sound condition for active service.

Mr. Healy (Louth, N.)—Can the hon. gentleman say how many asses were sent out to South Africa? (Laughter).

Big Game Preservation in Africa.

In reply to Mr. Seton-Karr (St. Helen's), who, among other questions relating to the preservation of big game in Africa, asked whether an enquiry could be made into the circumstances of the recent sale in Mombasa by an Englishman of ivory to the value of £8,000,

Viscount Cranborne said.—Carefully drawn regulations for the preservation of wild animals have been in force for some time in the several African Protectorates administered by the Foreign Office as well as in the Sudan. The obligations imposed by the recent London Convention upon the signatory Powers will not become operative until after the exchange of ratifications, which has not yet taken place. In anticipation, however, steps have been taken to revise the existing regulations in the British Protectorates so as to bring them into strict harmony with the terms of the convention, The game reserves now existing in the several Protectorates are :—In (*a*) British Central Africa, the elephant marsh reserve and the Shirwa reserve ; in (*b*) the East Africa Protectorate, the Kenia District ; in (*c*) Uganda, the Sugota game reserve in the north-east of the Protectorate ; in (*d*) Somaliland a large district defined by an elaborate boundary line described in the regulations. The regulations have the force of law in the Protectorates, and offenders are dealt with in the Protectorate Courts. It is in contemplation to charge special officers of the administrations with the duty of watching over the proper observance of the regulations. Under the East African game regulations only the officers permanently stationed at or near the Kenia reserve may be specially authorised to kill game in the reserve. There is no reason to believe that this privilege has been abused. The question of extending the Kenia reserve will be considered. The circumstances connected with the alleged sale at Mombasa have not been reported to the Foreign Office. —*The Times.*

The Farmers' Club and Swine Fever.

At their December meeting the members of the Farmers' Club discussed a paper on swine fever read by Professor J. Wortley Axe. Subsequently, on the motion of Mr. Clare Sewell Read, it was resolved that "the Farmers' Club hopes that the Board of Agriculture will persevere in the slaughter, not only of all pigs suffering from swine fever, but also of all pigs that have been in contact with them ; and they would respectfully urge the Board of Agriculture to employ some veterinary surgeons in the administration of the order."—*The Times.*

CORRESPONDENCE.

THE NATIONAL VETERINARY BENEVOLENT AND MUTUAL DEFENCE SOCIETY.

Sir,

The report of the annual meeting of the Society which appeared in your issue of the 15th inst. has probably once more called attention to its existence, and I would take the opportunity, it you will allow me space, to offer a few comments on its management.

First, as to membership. The Hon. Sec. said there was a net gain of ten in the past year, making a total of 232, which he described as "a very fair membership, but nothing like what it ought to be considering the great benefits the Society offers to its members." Two hundred and thirty-two out of a Register of 3,417—and there are a good few in practice whose names are not on the Register—a very fair membership ! ! Evidently this gentleman is easily satisfied.

What are the Council and officials doing to increase the membership? Why pretty much what the teetotal apostles have done—set an example, talked yum-yum, and distributed tracts. The men who founded the Society—good men and true—were in advance of their time to some extent. They did their work well, and carried it as far as they were able. The present men can carry it on, but apparently they are incapable of moving it forward. Some of them, growing grey in the service, are still at their posts, and though naturally more averse to changes as the years pass they would doubtless acquiesce in any vigorous action if the "new blood" were willing to make an effort. But one has only to look at the list of names to get an idea of why the Society does not increase. All of them men in comfortable circumstances, a snug little party, and vastly well satisfied with themselves no doubt, but much more inclined to sit close and keep one another warm than to take up the steady, unrelaxing effort which is required to put that Society in the position it ought to occupy. "The Manchester Society" it was, and is ; "National" it is not. For the two London men have their hands sufficiently filled with their daily work to ensure their not doing much to forward the interests of the Society. One looks in vain on the Council for such working men as run the local veterinary societies, or of any of those Western counties men who ran the National meeting at Plymouth, or the equally capable (and if possible more hospitable) group at Dublin this year—and next year's gathering will show just such another group. Heavy weights are not wanted—there are enough of them, but men alert and active.

The President said "Some years ago I hinted that the proper thing to do is to federate with the local veterinary societies," etc. *Some years ago* ! ! They have allowed Mr. Barrett, hon. sec. of the Victoria Veterinary Benevolent, to "wipe their eye" on that item. And now another member proposes that they "take the first opportunity of considering the matter," while the Hon. Sec. says "Your Council has met twice during the year . . . . . thinking it advisable to call as few meeting as possible." So this looks like shelving that question for six months, if not for "some years." Surely these grave and reverend seigneurs must be some of the party that Rip found playing ninepins in the Kaatskills.

Then as to the year's work—well, "least said soonest mended." For cautiousness they might well hail from 200 miles farther north. Why if they want members it would have paid them to have defended the Hewson case at Carlisle, or the even more unjust, though less sensational, Callow case at Brighton.

But this Defence Fund is practically a mutual assurance society, and if the Council want to increase their

membership (I do not feel at all sure of that; anyway there is no evidence that they do) they must go to work at it in a more business-like manner than they have hitherto. Do they think that there is a "special dispensation" to bring men to their ranks on the sole recommendation that "it is for their own good?" The majority of Englishmen will bear telling that several times before they will take up anything. Federation is a large order, but they might certainly manage to get one representative from amongst the active members of each Society. But they must pick their men for the work—not take the president or secretary simply because he holds office. The first requirements are pleasant manners, sound judgment, and a decided prepossession in favour of the Society, and I am not sure that the last of these should not be set first. This member's name should appear on the notices of the local society as the accredited representative of the National Defence Society, and he should be supplied with printed matter, a folding card, say, setting forth the aims and status of the Society. (As he would work solely within the profession not even the R.C.V.S. could carpet him for advertising.)

It might even be well for some of the heads to take an occasional journey to a Society meeting for the express purpose of advertising the Society—there is a tradition that such a thing was done in the early days. And why should not the annual meeting of the National be squeezed for a half-hour meeting with an address from one capable member of the National Defence and remarks by a few others.

There is just one exhortation; let them remember *Il n'y a rien qui succè de comme le succes.*

As to the Benevolent, there is less to be said. Since you, Mr. Editor, afforded me space some years ago to point out that their Benevolent Society was only a Provident society with uncertain benefits there has been a change, and an improvement. I cannot say it was *propter hoc*, most certainly it was *post hoc*.—Yours obediently,

SOUTH COUNTRY.

ASSISTANCE AND CRITICISM.

Sir,

Mr. Harold Leeney asks some pertinent and interesting questions in his last week's article.

The shoe I have found the best for a horse with a dropped sole (not resulting from laminitis) is a wide webbed shoe well seated out, and resting on the wall of the foot only. I treated a horse with what is called in Lancashire "a bumble foot" where the sole at its centre was arched like an inverted dome and a good inch below the sole at the white line. The shoe used was a wide-webbed shoe well seated out from its outside edge, like a saucer, and made as wide as possible to protect the sole but not to touch it at any part. The farriers art comes in here.

If the condition in the case that Mr. Leeney cites was that there was a cocked toe and a dropped sole on *one and the same foot* (which is not very clear from his article) then the remedy to my mind for the cocked toe would hardly lie in the shoeing. A plain, well seated shoe without toe and heel pieces is the shoe for a dropped sole, and the shoe on the sound foot on the opposite limb ought to have a plain flat ground surface.

The abnormal growth of the horny box after neurectomy is hard to explain. It may be that the nutrition which should go to nourish the perfect unsectioned nerve is diverted thence after section to the horn papillæ and laminæ. It may be that section of the nerve causes increased functional activity of the nourishing media of the horn papillæ and laminæ. Division of a sensory nerve (as in neurectomy) causes degeneration of that nerve below the point of section, and the nutrition to the portion of nerve below the point of section is cut off. The plasma which nourishes that portion of nerve may be diverted elsewhere.

Section of the sensory nerves can hardly be expected to deprive a foot of nutrition although it is said that it does do so occasionally. I should say that we ought to expect that lack of blood supply and lack of active use would be far more destructive to nutrition than lack of innervation. Abnormal growth seems to be associated with lack of nervous irritability. It is open to question whether a nervous irritable thin man could not be converted into a comfortable, happy, plegmatic man by section of a nerve here and there.

As a coincidence it is curious how ovariotomy sometimes causes increase in fat and flesh. We put it down that the increase in this fat and flesh is due in our patients to cessation of sexual activity. I am not sure we are wholly correct in our surmise. It may be that the lack of nervous irritability associated with the sexual act has something to do with the fattening, for in the human subject at any rate the loss of the ovaries does not mean the loss of the act of connection. In the human subject there is often frequent diarrhœa after ovariotomy and yet the patient puts on flesh. The conclusion of the whole matter seems to be the fewer nerves we have the fatter we get.

If by the foot coming off Mr. Leeney means the horny box coming away from the sensitive structures, this is caused by the death or destruction of function of the horn papillæ and laminæ. In laminitis in prolonged subjection to the action of cold, in mechanical injuries this result occurs because the inflammatory action—the cutting off or driving away of the blood supply, causes gangrene or lack of nourishment ending in mortification and necrosis.

Neurectomy for navicular disease is only a palliative though useful measure. The lameness is relieved. The structural changes that have taken place are in my opinion never cured. Shoeing with tips and a fair amount of exercise may be of advantage in cases of navicular disease.

G. M.

EPIDERMAL GROWTH.

Sir,

In your last issue Mr. Harold Leeney asks three questions, two of which, with your permission, I shall try to answer. First, why is the growth of the horn of a horse's unnerved foot abnormally great?

In a book "Stable Management and Exercise," which you, Mr. Editor, have not honoured by a notice in your columns, I have discussed the subject of epidermal growth, so I need now touch only lightly on it.

The growth of the epidermis (which, as we all know, is non-vascular) varies inversely to that of vascular tissues. The latter structures, other conditions being equal, become developed in proportion to the blood supply; but the former is dependent for its nourishment on the amount of lymph which is present in its immediate vicinity. As accumulation of lymph is promoted by retardation of the circulation of the blood (*e.g.* in inflammatory stasis and passive congestion of the limbs from long standing) we find that the slower is the circulation of blood the quicker is the growth of the epidermis, and *vice versa*. Consequently external cold and blistering promote this growth. I need hardly point out that during the course of inflammation brought on, for instance, by blistering, the period of blood stasis is far longer than that of initial vascular stimulation. Also, as my friend Dr. W. H. Willcox, of St. Mary's Hospital, kindly points out to me, in human cases of tuberculosis, myxœdema

with weak circulation, and congenital heart disease, there is an abnormal tendency for the skin to become thick and the hair coarse.

I venture to submit that the foregoing considerations suggest the conclusion that the cause of the abnormally great increase of the growth of the horn of an unnerved foot is retardation of the circulation of the part due to decreased innervation.

Secondly, Mr. Leeney writes: "I have never been able to obtain a satisfactory explanation of the sloughing of a foot when not pricked or due to a direct injury. Does it in rare instances (the operation I mean) deprive the foot of nutrition, and in the majority of cases add so greatly to it?" The fact that neurotomy stimulates the growth of the epidermal covering of the foot (horn) indicates that it decreases the nutrition of the vascular pedal tissues, the defective nourishment of which appears to be the cause of the non-traumatic sloughing or degeneration, as the case may be.—Your obedient servant,

M. H. Hayes.

Crick, Rugby.

THE EDITOR'S APPEAL.

Sir,

In the last issue our Editor makes an earnest appeal to the profession at large for reports of cases, one to which we should respond, and more than that considering the labours of this gentleman for so many years in the several fields of veterinary science he is amply entitled to. More than twenty years ago poor John Steel —brilliant and still much regretted—said, "We are not a writing profession its great pity." In these days, however, it is reluctantly said we do not stop at that, we are practically non-progressive, indifferent, and unfriendly. Perhaps this is expressing the state of affairs a little strongly, but our Editor's columns are always open to fair discussions, and happily it would be were we not so apathetic. Why is it all?

It is true many of us are much older and have battled more with life than thirty years ago, but does that take off the interest with which we should pursue the weekly *Record* with our Saturday evening's smoke and criticise such material as is therein offered for assimilation. Why can't some of us put the thoughts thereby evolved on paper? We know a few of our members are too busy in general, but even the busiest man has some leisure moments, and then again many have considerable spare time. Are we afraid of imparting too much knowledge to our fellow practitioner, giving him some "pointer" or other which we pride ourselves is a discovery belonging specially to us, or are we so self-satisfied both personally and with our business affairs that we don't care a hang about the profession at large?

It appears to be a hopelessly apathetic state of affairs on the remedy for which one man cannot say much. In the days of old time pupilage men generally, without doubt, were much more in love with and more zealous of their profession. Forty years ago the columns of *The Veterinarian* and *Veterinary Review* teemed with interesting matter contributed by practitioners, and how is it now? Though the older practitioners tell me the colleges do not turn out the men they did (that is in a practical way; though brilliant in all the collateral branches, they are not adaptive or ingenious in obstetrics, securing for operations, details of everyday surgery) if they have not had that clinical experience necessary for them to report actual cases, why not give the rusty old fogies and busy all round men some pieces of those collaterals they have imbibed and assimilated in their student days? There's a big field here alone. We would like to know of a few of the new discoveries of physiology, the actions of latest drugs, and fresh operations and treatment. In these columns we should have hailed with pleasure any dissertation Mr. Atkinson might want to make on the "doping of racehorses" we would have rather seen it there than in the daily press (the trainers say his knowledge of that subject is very limited) and all such like matters. In return we older practitioners would give the younger members all the interesting cases we can find in our practice, past, present, and in the future; we needn't write much, state plain facts, and let them criticise us to their heart's content. It will do us all good and help us all along.

Our Editor for a very long time now has done, and is doing, as much as man can for the benefit of the profession. Let us show our appreciation of his worth by answering his appeal.

W. F. S.

Sir,

I deeply sympathise with you in your difficulty of this matter and am in agreement with you that the majority of your readers prefer "clinicals." When your journal first made its appearance no one rejoiced more than myself at the prospect of weekly scientific information, but in the matter of helping you to keep it up I must own myself a great sinner, and why? In your short editorial on this subject you say, "thirty years ago the practitioners recorded interesting cases, but now when we *assume* to be more scientific and better educated we do not. What is the explanation?" If I may venture an answer to your question I should say reporting, like diagnosing, requires special *teaching* and *practice*, so that no matter how learned and scientific some men are they will not put their hands to reporting. I have seen many of our men make the attempt, and after writing and re-writing give it up. As a confirmation of my argument see *Harmsworth's* Christmas Number, 1900, how Lord Macaulay treated some of his essays. You say if we knew the cause we might suggest a remedy. If I am right as to the cause I should say the remedy is partly in your own hands and with the teaching schools and students' associations who should teach and practice reporting. You, Mr. Editor, who can give as good a paper on veterinary matters as anyone could also give a good essay on the art of *reporting*.

Your correspondent R. W. Clark has stepped well into the breach with a most interesting and difficult subject "Two Cases of Twist," and if I can only find courage to do the *reporting* I will in a future number give you a few more instances of the peculiarities of the malady.—Yours truly,

An Old Instrument.

DISINFECTANTS AND ABORTION.

Sir,

It is difficult of proof, but my own experience of 30 years is to the effect that any beastly stink, like crude carbolic acid, is liable to induce abortion. The smell of a decomposing carcase, the sight of blood, or other substances which disgust or affright a cow or ewe are factors in the production of abortion. Why insist on such an offensive agent when there are plenty to choose from!

A Veterinary Chemist. (M.R.C.V.S., and M.P.S.)

Communications, Books, and Papers received:—Messrs. C. G. Hill, W. Frank Smith, H. S. Elphick, W. M. Scott, J. B. Wolstenholme, J. Campbell Hill, W. H. Williamson, G. Mayall, E. Wallis Hoare, A. Marshall, F. W. Hall, Lt.-Col. Nunn. Capt. Hayes. J. F. K. "A Veterinary Chemist."

Journal of Comparative Med. & Vety. Arch. (Phila., Oct.)

Original articles and reports should be written on one side only of the paper and authenticated by the names and addresses of the writers, not necessarily for publication.